IN THE CLAIMS:

Please amend the claims as indicated below:

1. A method for detecting an object of interest in an image processing system, the method comprising the steps of:

generating a difference image;

segmenting the difference image into a plurality of regions utilizing a grouping principle for preattentive perception, wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more lines passing through the entire image;

identifying one or more silhouette candidates in at least a subset of the regions; and

detecting the object of interest based at least in part on the identified silhouettes.

2. The method of claim 1 wherein the object of interest comprises a moving person.

3. The method of claim 1 wherein the difference image comprises a thresholded difference image generated by taking a difference between a first image and a second image and applying binary thresholding to the resulting difference.

4. The method of claim 1 wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more vertical lines passing through the entire image.

5. The method of claim 1 wherein each of the regions of the image which includes a silhouette candidate includes only a single silhouette candidate.

6. The method of claim 1 further including the step of determining saliency values for each of the silhouette candidates using tensor voting.

7. The method of claim 2 further including the step of detecting a neck position of the moving person by analyzing a sum of x-components of tangents along a corresponding silhouette.

8. The method of claim 7 further including the step of utilizing the detected neck position to determine at least one of a head position and a head size for the moving person.

9. An apparatus for detecting an object of interest in an image processing system, the apparatus comprising:

a camera; and

a processor coupled to the camera and operative (i) to generate a difference image from a signal received from the camera; (ii) to segment the difference image into a plurality of regions utilizing a grouping principle for preattentive perception, wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more lines passing through the entire image; (iii) to identify one or more silhouette candidates in at least a subset of the regions; and (iv) to detect the object of interest based at least in part on the identified silhouettes.

10. The apparatus of claim 9 wherein the object of interest comprises a moving person.

11. The apparatus of claim 9 wherein the difference image comprises a thresholded difference image generated by taking a difference between a first image and a second image and applying binary thresholding to the resulting difference.

12. The apparatus of claim 9 wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more vertical lines passing through the entire image.

13. The apparatus of claim 9 wherein each of the regions of the image which includes a silhouette candidate includes only a single silhouette candidate.

14. The apparatus of claim 9 wherein the processor is further operative to determine saliency values for each of the silhouette candidates using tensor voting.

15. The apparatus of claim 10 wherein the processor is further operative to detect a neck position of the moving person by analyzing a sum of x-components of tangents along a corresponding silhouette.

16. The apparatus of claim 15 wherein the processor is further operative to utilize the detected neck position to

determine at least one of a head position and a head size for the moving person.

17. The apparatus of claim 9 wherein the image processing system comprises a video conferencing system.

18. The apparatus of claim 9 wherein the image processing system comprises a video surveillance system.

19. The apparatus of claim 9 wherein the image processing system comprises a human-machine interface.

20. An article of manufacture comprising a storage medium for storing one or more programs for detecting an object of interest in an image processing system, wherein the one or more programs when executed by a processor implement the steps of:

generating a difference image;

segmenting the difference image into a plurality of regions utilizing a grouping principle for preattentive perception, wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more vertical lines passing through the entire image;

identifying one or more silhouette candidates in at least a subset of the regions; and

detecting the object of interest based at least in part on the identified silhouettes.